

## ABSTRACT

A hypergolic fuel analytical device is provided for testing the reactive characteristics of hypergolic substances. An oxidizer and a reactive fuel/substance are atomized and mixed under pressurized gas force, and the reaction characteristics thereof measured for analysis. The hypergolic fuel analytical device comprises a compressed inert gas supply means; a first valve flowably connected to the inert gas means; a reservoir flowably connected to the first valve; a second valve flowably connected to the reservoir; a switching means conductively connected to the first valve and the second valve; a gas conduction means connected to the second valve, the gas conduction means having a first gas lead and a second gas lead; an oxidizer atomization means connected to the first gas lead; a fuel atomization means connected to the second gas lead; an oxidizer supply means flowably connected to the oxidizer atomization means; and a fuel supply means flowably connected to the fuel atomization means, wherein fuel is fed from the fuel supply means into said fuel atomization means, oxidizer is fed from the oxidizer supply means into said oxidizer atomization means, the switching means activates the first valve so as to open said first valve and fill the reservoir with compressed inert gas, and the switching means then activates the second valve so as to open same and thus feed compressed inert gas from the second valve to the oxidizer atomization means and the fuel atomization means via the first gas lead and the second gas lead.